

REMARKS

Claims 1-24 are pending in this application. Claims 1-8, 13-17, 20 and 22-23 have been now amended, and claims 11, 12 and 21 have been canceled. After claim additions, amendments and cancellations herein, claims 1-10, 13-20 and 22-24 will be pending in this application.

Reconsideration of the above-mentioned application in view of the following remarks is respectfully requested.

Independent claims 1, 20 and 22 were amended to overcome prior art rejections.

35 U.S.C. § 112 Rejection

In the Office Action, the Examiner rejected claims 8, 20 and 21 under 35 U.S.C. § 112, first paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. The Examiner stated that the recitation “of a cushioning cells side is carved” in claim 8 is vague and indefinite, and the Examiner requested clarification of this limitation. The Examiner also stated that there is insufficient antecedent basis for the limitation “said sealing line” in line 6 of claim 20.

In response, claim 8 has been amended to correct the word “carved” that was misspelled to the correct spelling “curved” (see page 8, line 21 of the specification for support). Claim 8 has also been further amended in order to more particularly point out and distinctly claim the subject matter of the invention. In addition, claim 20 has been amended to recite the limitation concerning “a sealing line” rather than “the sealing line” in order to cure the antecedent issue. In addition, claim 21 has been cancelled. Applicant requests that these rejections be withdrawn.

Applicant also notes that claims 4-7 and 13-15 were amended in order to correct grammatical and/or claim dependency errors, and claims 12, 16, 17 and 23 were amended in order to more particularly point out and distinctly claim the subject matter of the invention.

35 U.S.C. § 102 Rejection - Larson et al.

The Examiner rejected claims 1-4, 9-17 and 19-24 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,017,351 (Larson et al.). According to the Examiner, Larson et al. disclose a cellular cushioning material containing all the limitations of these claims.

Applicant respectfully traverses the Examiner's rejections.

The present invention discloses inflatable cellular cushioning material that is adapted to be inflated by a user on an as-needed, real-time basis and that allows the formation of multiple cells of different sizes and shapes. The material comprises a sheet made of at least two layers of plastic pre-welded to one another in a predetermined manner so as to form a plurality of diagonally oriented, inflatable sleeves in communication with an air passage. The inflatable sleeves are configured so as to allow the formation of adjacent rows of individual inflated cells by applying sealing lines that extend substantially the entire width of the sheet and intersect the plurality of sleeves. The sealing lines are applied at predetermined intervals along the longitudinal axis of the sheet and intersect both the sleeves and the air passage. By varying the distance between the sealing lines and/or the angle between the sealing lines and the sleeves, the size and shape of the inflated cells, as well as that of the inflated sheet, can be easily varied according to need while using the same inflatable material.

Larson et al. also teach a strip of inflatable material to be inflated and sealed at the site of intended use. However, the material taught by Larson et al. is completely different from the material taught by the present invention. The material taught by Larson et al. comprises two films fused together in discrete areas to define rows of inflatable chambers wherein each row consists of only two chambers positioned each on one side of a central air passage that extends the length of the strip. Each of the chambers has a plurality of constricted chamber areas along its length and a narrow inlet opening communicating with the air passage. After inflation, the inflated chambers are sealed off by continuously pressing a heated shoe (81) against the moving strip through a moving belt (44) to form continuous longitudinal sealing lines to seal off the inlets openings 20 by means of rails 82 positioned between the air passage and the chambers (see Larson et al., Fig. 6, column 3, lines 6-10 and column 7, lines 5-12). The sealing lines taught by Larson et al. clearly do not intersect air passage 18, but rather run in parallel thereto.

Thus, the material shown in Larson et al. provides an inflated material with inflated chambers according to a predefined pattern. In accordance with Larson et al., the rows of chambers, as well as the chambers themselves, are defined at the formation stage of the material (i.e., in formation station 22) prior to inflation and not at the sealing stage, as in the present invention. The material disclosed by Larson is provided a predefined pattern that imposes the final shape and size of the inflated sleeve (See Larson et al., column 8, lines 6-8). Contrary to the invention as claimed in the amended claims, the material taught by Larson et al. does not allow for any flexibility in varying the size and/or the shape of the inflated cells at the sealing stage.

Furthermore, in accordance with Larson et al., only one elongated chamber can be formed at each side of the air passage. Although, each chamber is divided into a plurality of inflated portions separated by constrictions, these portions are in air communication with each other. Thus, if one portion ruptures, the entire chamber, i.e., half a row, deflates. In this respect, it should also be noted that, contrary to the Examiner's assertion (page 3, third line from bottom of the Office Action), Larson et al. do not teach that the air passage is located at the side of the sheet. Rather, all the examples given by Larson et al. show the air passage is located at the center of the sheet. An air passage located at the side of the Larson's sheet will result in a deflation of an entire row upon rupture of one inflated portion. In contradistinction, the material of the present invention allows for the formation of any desired number of individual cells in a row with no air communication between adjacent cells.

Moreover, as mentioned above, the present invention teaches sealing the inflated sheet to form inflated cells by applying sealing lines at predetermined intervals. The sealing lines extend substantially the entire width of the sheet and intersect both the sleeves and the air passage. BY contrast, Larson et al. teach continuous longitudinal sealing lines that run in on both sides of the air passage in parallel thereto. As explicitly stated on in Larson et al. at column 3, lines 23- 24, and as can be clearly seen in Fig. 6, the sealing means (82) engages the strip material only around the air passageway. The Examiner asserts, referring to column 2, lines 38-40 and column 4, lines 60 of Larson et al., that Larson et al. teach a sealing line extending the entire width of the sheet. Applicant respectfully submits that the sealing lines referred to in the cited passages are

lines formed at the formation station prior to inflation, not the sealing lines formed in order to seal the inflated chambers.

Applicant notes that claims 1, 20 and 22 have been amended herein in order to more particularly point out and distinctly claim the subject matter of the invention and to reflect the differences between the inflatable material of the present invention and the material taught by Larson et al.

Regarding claim 1, Larson et al. do not teach the formation of a row of individual cells by applying a sealing line that extends substantially the entire width of the sheet. Rather, Larson et al. teach a sealing line that extends along the longitudinal air passage. Furthermore, Larson et al. do not teach the formation of a row of individual cells, but rather the formation of only two chambers in a row.

Regarding claim 20, Larson et al. do not teach a sealing line that extends the entire width of the sheet and intersects the sleeves and the air passage. Rather, Larson et al. teach a longitudinal sealing line that runs in parallel to the air passage.

Regarding claim 22, Larson et al. do not teach sleeves extending in a first direction, an air passage extending in a second direction and a sealing line that extends in a third direction that intersects the first and the second directions.

Applicant respectfully submits that, in light of the above amendments and arguments, independent claims 1, 20 and 22 are patentable over Larson et al.

35 U.S.C. § 103 Rejection - Larson et al.

The Examiner rejected claims 5-8 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,017,351 (Larson et al.). According to the Examiner, Larson et al. fails to disclose the at least two cushioning cells being of a rhombus, diamond, parallelogram or carved side shape, but that it would have been obvious to one of ordinary skill in the art to change the

shape of the cushioning cells since this would be an unpatentable modification in the absence of a showing of unexpected results.

Applicant respectfully submits that, as discussed above, the present invention allows for the formation of inflated cell of various shapes from the same inflatable material by varying the angle between the sealing line and the sleeves. In contradistinction, the Larson et al. material is provided with a pre-defined chamber pattern that is determined at the formation station and does not offer any flexibility for varying the cells shape at the sealing stage.

35 U.S.C. § 103 Rejection – Larson and Kerr

Claim 18 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Larson et al. in view of U.S. Patent No. 4,551,379 (Kerr). According to the Examiner, Larson et al. fails to disclose the diagonally oriented sleeves having straight edges for the purpose of forming an inflatable cushioning packaging material. The Examiner states that it would have been obvious to one of ordinary skill in the art to provide the diagonally oriented sleeves with straight edges to produce an inflatable cushioning material for packaging.

Kerr teaches a packaging material having a plurality of longitudinal inflatable passages to be inflated by a manifold carrying a number of nozzles that correspond in spacing and number to said passages (see Kerr at Fig. 2 and column 3, lines 12-17). The method and material taught by Kerr do not allow for the formation of inflated material having separated inflated cells along the longitudinal axis of the sheet by using one air inlet. Larson et al., on the other hand, provide an inflatable material to be inflated by one air nozzle but that allows for only one inflatable chamber on each side of the air passage. By contrast to both, the unique and novel structure of the material as presently claimed allows for the formation of a plurality of individual inflated cells expanding across both longitudinal and transversal axes of the sheet by using only one air nozzle. In light of the arguments mentioned above in view of Larson, Applicant respectfully submits that claim 18 is patentable over Larson et al. in view of Kerr.

Conclusion

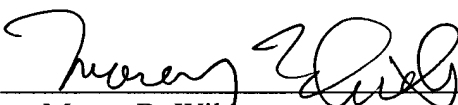
Reconsideration of the present application, as amended, is requested. In view of the above amendments and remarks, Applicant respectfully submits that amended claims 1-10, 13-20 and 22-24 are now in condition for allowance. A Notice of Allowance is earnestly and respectfully sought.

If, upon review, the Examiner is unable to issue an immediate Notice of Allowance, the Examiner is respectfully requested to telephone Applicant's undersigned attorney in order to resolve any outstanding issues and advance the prosecution of the case.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

DAVIDSON, DAVIDSON & KAPPEL, LLC

By: 
Morey B. Wildes
Reg. No. 36,968

Davidson, Davidson & Kappel, LLC
485 Seventh Avenue - 14th Floor
New York, New York 10018
(212) 736-1940